

REMARKS

As a preliminary matter, Applicants again acknowledge and appreciate the Examiner's statement that claims 12-13 and 17-18 would be allowable if rewritten in independent form. At this time, Applicants elect to keep these claims in their present form pending the Examiner's response to the remarks submitted herein.

Claims 1-4, 9, 10, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of Tsuyoshi. Applicants respectfully traverse the rejection.

Claims 1 and 3 define, among other things, recording at least servo information of preformat information on a magnetic recording medium by magnetic transfer, and recording preformat information excluding the servo information on the same magnetic recording medium by a recording head. The Office Action does not cite any reference teaching or suggesting at least this combination of features. A *prima facie* case of obviousness is not met by merely citing a teaching of recording servo information by magnetic transfer and separately citing a teaching of recording preformat information stored on a different magnetic medium, for a different apparatus, using a recording head.

Ishida is cited for teaching "a magnetic recording apparatus including a recording head (col. 3, line 58)" and for teaching "steps of recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer (col. 3, line 63 – col. 4, line 6)." However, Ishida fails to teach that, on this same magnetic recording medium, the recording head disclosed in col. 3, line 58 is used to record preformat information excluding the servo information.

The Office Action states (page 3) that Ishida “discloses that recording preformat information with a recording head using a servo writer is very well known in the art for positioning control”. Ishida discloses prior art systems in which a built-in magnetic head records preformat information after the disks and heads have been installed in the drive. In a completely different embodiment, Ishida discloses using a master information carrier to record preformat information. The Office Action fails to cite any disclosure in Ishida in which the built-in magnetic head records at least servo information, and a master information carrier records preformat information excluding the servo information, on the same magnetic recording medium. Ishida not only fails to teach or suggest this feature, but instead teaches directly against it (col. 7, lines 36-40).

The secondary reference, Tsuyoshi, adds no significant teaching to Ishida. The Office Action cites Tsuyoshi for teaching “recording preformat information excluding the servo information on the magnetic recording medium by the recording head”. However, Tsuyoshi apparently fails to teach or suggest how the preformat information in Figs. 5(a)-5(f) is formed. The only apparent teachings are that the preformat information is “recorded in advance” (col. 4, lines 65-68), that the servo field (or sector mark) is “stored in advance with the servo information when the disk is fabricated” (col. 4, lines 60-64), and that the “servo information in the pre-formatted area is formed in advance as undulations which are one quarter as deep as the wavelength of the laser beam used with the disk” (col. 6, lines 32-35).

Further, Tsuyoshi is directed to problems relating to optical disks, not magnetic recording media. The specific problem addressed by the sector and block system in Tsuyoshi

is that of reduced data stored on an optical disk of sector servo type, due to the large number of sectors typically required per track, versus a magnetic disk of the same type (col. 1, lines 50-54; col. 3, lines 16-51).

Additionally, there is no disclosure in Tsuyoshi of recording preformat information excluding servo information on the same magnetic recording medium on which at least servo information is recorded by magnetic transfer. Thus, the references even when combined fail to teach or suggest all of the features of the claims.

The Office Action also provides no teaching explaining how either of the references would be modified (the Office Action merely states, “it would be obvious to modify Tanaka’s [assumed to be Tsuyoshi’s] technique to modify Ishida’s method”). In its embodiments (other than background), Ishida discloses a magnetic recording/reproduction device having a magnetic head that records information signals on a magnetic recording medium and reproduces the information signals thus recorded on the magnetic recording medium (col. 3, lines 58-61; col. 7, lines 2-4). The magnetic head is used for recording data signals (col. 13, lines 65-66). With respect to recording preformat information by a recording head of a servo writer, Ishida does not expressly disclose recording such information by a magnetic head, but by magnetic transfer. Accordingly, it would be difficult to realize, by using the magnetic head of Ishida, the steps of Tsuyoshi for recording preformat information excluding the servo region as suggested in the Office Action.

The Office Action further provides no valid motivation for why one of ordinary skill in the art would combine Ishida and Tsuyoshi. The Office Action cites a

motivation “to provide the method disclosed by Ishida with the capability of recording ID information signal without reducing the data recording area (as Tsuyoshi teaches in col. 3, lines 55-60)”. This cited passage of Tsuyoshi teaches avoiding reducing data recording area not by recording preformat information using both magnetic transfer and a recording head, but by providing ID and synchronization information for an entire block (group of sectors). See, e.g., col. 3, lines 55-60.

Further, the Office Action provides no explanation for why the direct teaching of Ishida (col. 7, lines 36-40) should be contradicted. Applicants have previously mentioned this direct teaching in Ishida, but it has not been addressed (there is no “Response to Arguments” section in the present Office Action).

Additionally, claim 3 further defines, among other things, recording a transfer clock pattern, which is synchronized with a pattern of the servo information, on the magnetic recording medium. The Examiner appears to assert that a clock signal for synchronization in Ishida corresponds to a transfer clock pattern. The clock signal of Ishida is recorded with a servo signal by magnetic transfer. On the other hand, the transfer clock pattern of claim 3, after recording a pattern of servo information, is recorded on a magnetic recording medium as a transfer clock pattern, which is synchronized with the pattern of the servo information. Moreover, since the transfer clock pattern of claim 3 is used when recording preformat information (“as patterns synchronized with the transfer clock pattern”), it is significantly different than the clock signal disclosed in Ishida.

Claim 2 defines, among other things, recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer; reproducing preformat information recorded by magnetic transfer; fining a pattern of the reproduced preformat information; and recording the fined preformat information on the magnetic recording medium by the recording head. Applicants respectfully submit that the cited combination of references fails to teach or suggest at least these features as well.

The Office Action cites Ishida for teaching reproducing preformat information (col. 13, lines 38-39) and fining a pattern of the reproduced preformat information (col. 8, lines 4-5). However, the “fining” cited in col. 8, lines 4-5 refers not to fining a pattern of the reproduced preformat information, but to forming the master information pattern, particularly the “fine ferromagnetic film pattern corresponding to the information signal”, by “utilizing a variety of fine processing techniques such as master stamper processes for optical disks or semiconductor processes”. According to Ishida, by using a master stamper on which fine ferromagnetic film pattern is formed by utilizing fine processing techniques, it would be possible to record fined information on a magnetic recording medium by magnetic transfer. However, the fine processing technique disclosed by Ishida cannot further fine an information pattern that has already been recorded on a magnetic recording medium.

Further, with respect to claim 2, the Office Action fails to cite any disclosure for recording this fined preformat information on the magnetic recording medium by the recording head. Thus, a *prima facie* case of obviousness is not present.

Claims 9, 10, and 15 define, among other things, a reproducing head for reproducing information recorded on a magnetic recording medium having at least a servo information pattern of preformat information patterns which is recorded thereon in advance by magnetic transfer; and a recording head for recording preformat information patterns excluding the servo information pattern on the magnetic recording medium. This rejection is traversed for similar reasons as for claim 1.

For at least these reasons, Applicants respectfully submit that claims 1-4, 9, 10, and 15 are allowable over the references of record, including Ishida and Tsuyoshi. Applicants thus respectfully request reconsideration and withdrawal of the rejection.

Claims 5-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of Tanaka. Applicants respectfully traverse the rejection, as the cited combination of Ishida and Tanaka fails to teach or suggest all of the defined features of claim 5.

In rejecting independent claim 5, the Office Action cites Tanaka (FIGs. 1 and 3D; col. 3, lines 13-16; col. 4, line 66 – col. 5, line 6) for teaching “preformat information patterns excluding the servo pattern recorded as fine patterns after said servo information pattern is recorded.” However, the cited portions of Tanaka fail to teach or suggest at least this feature. The Office Action appears to assert that the frame synchronization mark and the fine pattern disclosed in Tanaka correspond to the claimed “preformat information patterns excluding the servo information pattern recorded as fine patterns” in claim 5. Tanaka, though, does not appear to disclose that the frame synchronization mark and the fine patterns

are recorded after servo information patterns are recorded, as defined in the claim. Instead, as with clock marks, Tanaka teaches that address patterns and fine patterns constituting a servo pattern zone have been formed at the time of manufacturing (col. 3, lines 47-50). Looking at each of the portions cited in the Office Action, FIGs. 1 and 3D simply show an exemplary sector (segment). Col. 3, lines 13-16 teach frame synchronizing marks, which are part of a servo pattern zone (col. 4, lines 35-54) that is “formed at the time of manufacturing” (col. 3, lines 47-50). Col. 4, line 66 – col. 5, line 6 discloses a fine pattern “for obtaining information on a position being within one track”, which is also part of the servo pattern zone formed at the time of manufacturing (col. 3, lines 47-50).

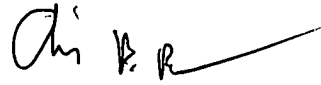
Accordingly, Applicants respectfully submit that claims 5-8 are allowable over the references of record, including Ishida and Tanaka. Applicants thus respectfully request reconsideration and withdrawal of the rejection.

Claims 11, 14, 16, & 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida and Tsuyoshi, and further in view of Yamakoshi. Applicants respectfully traverse the rejection for at least the reasons stated above regarding Ishida and Tsuyoshi as applied to independent claim 9, and for at least the additional reason that Yamakoshi fails to remedy the deficiencies of Ishida and Tsuyoshi, even in combination. Applicants thus respectfully request reconsideration and withdrawal of the rejection.

For at least the foregoing reasons, Applicants believe that this case is in condition for allowance, which is respectfully requested. The Examiner should call Applicants' attorney if an interview would expedite prosecution.

Respectfully submitted,
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